IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application Of:	**David L. Morris**	§	
Serial No.	**09/943,189**	§	**Group Art Unit: 2856**
Filed:	**August 30, 2001**	§	**Attorney Docket No. P-7764.006**
For:	**Heater Tube**	§	

Rule 132 Declaration

1. I, David L. Morris, am the inventor of a process for producing heater tubes by a burnishing process as set forth in the above identified patent application.

2. I received a degree in Chemistry from Western Kentucky University in 1968.

3. Disposable heater tubes are used in a lab testing machine known as the JFTOT (Jet Fuel Thermal Oxidation Test).

4. The JFTOT test is used worldwide as one of the standard testing methods for jet fuel.

5. The original JFTOT machine was invented by Mr. Alf Hundere, U.S. Patent No. 3,670,561 in about 1970 and Mr. Hundere's company manufactured JFTOT machines and disposable heater tubes until it was ultimately acquired by Petroleum Analyzer Company, L.P., commonly known in the industry as PAC, a Roper Industries Inc. company.

6. A photograph of a sample disposable heater tube is attached as Exhibit A to give a better understanding of a disposable heater tube which is about 161.925 mm long cm long with a diameter of 4.699 mm at each end, 3.175 mm in diameter at the reduced center section of 60.325 mm in length, with a small passageway, 1.651mm diameter extending lengthwise through the center.

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7. An example of disposable JFTOT heater tubes is also shown at http://www.petroleum-analyzer.com/product/Alcor/htrtubes.htm.

8. A disposable JFTOT heater tube is about the size of a #2 pencil and typically made of aluminum, although there are stainless steel and carbon steel heater tubes.

9. As far as is known disposable heater tubes and the method for making them have been substantially unchanged for more than 30 years from their date of invention and prior to my invention.

10. After machining to the desired dimensions, each heater tube is typically polished so that it has a bright or highly reflective surface.

11. The dimensions of disposable heater tubes are set by the JFTOT machines into which the disposable heater tubes are placed to test each batch of jet fuel.

12. A disposable heater tube basically acts as a resistance heater in a JFTOT machine and is heated to a high temperature while jet fuel being tested is flowed around the heated heater tube so that a coating from the fuel is formed on the highly polished central portion of the tube.

13. The coated tube is then removed from the JFTOT machine and a determination is made of the suitability of the jet fuel for jet engines by visually inspecting the tube and viewing the coating from the fuel on the highly polished surface.

14. Heater tubes are never reused and are retained for a period as proof of the quality of the jet fuel.

15. As far as known, for more than 30 years prior to my invention, Alcor, Inc., a sister company of Petroleum Analyzer Company, L.P. (www.alcorinc.com and www.petroleum-analyzer.com) and its predecessors, manufactured a JFTOT machine and has been the only supplier of disposable JFTOT heater tubes in the marketplace.

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16. Alcor, Inc. is the manufacturer of the *only* instrumentation, see http://www.petroleum-analyzer.com/product/Alcor/lit_alcor/JFTOT.pdf, for ASTM D 3241 method that performs numerous tube quality tests, each carried out so you can sell a tank of fuel for use in an aircraft rather than sell it as kerosene.

17. Alcor, Inc. considers its own manufacturing procedure for polishing JFTOT heater tube stock a proprietary trade secret, but Alcor has never used burnishing to commercially produce disposable JFTOT heater tubes.

18. In 1989 I was employed by Alcor, Inc. and I researched using burnishing for making disposable JFTOT heater tubes as a possible replacement method to be used by Alcor to polish heater tube stock to make a finished and usable disposable heater tube.

19. After attempting over a period of 12 months to use burnishing to finish the surface of disposable JFTOT heater tubes, I was unsuccessful at making a suitable heater tube.

20. Heater tubes are relatively small and thin and are difficult to cold work without affecting their dimensions.

21. My employment with Alcor, Inc. ended in 1990 after I was unsuccessful at using burnishing to finish disposable JFTOT heater tubes.

22. After I was terminated at Alcor, Inc, the project was abandoned and the burnishing equipment was sold off.

23. After I was terminated by Alcor it bothered me for many years that I had failed to make burnishing work for polishing heater tubes.

24. Because of my failure to utilize burnishing to finish the surface of disposable JFTOT heater tubes, in 1999 I decided to make another attempt at using burnishing, on my own, as a way of making disposable JFTOT heater tubes.

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25. When I decided to make a second attempt, I looked around at machine tool companies for a burnishing machine and in 1999 I obtained, as used machinery, the same burnishing equipment I had used at Alcor.

26. I purchased aluminum tubing of the same type and grade used by Alcor, Inc. to produce disposable JFTOT heater tubes and began conducting experiments with the burnishing equipment and tubing.

27. This second attempt, over ten years after my first attempt failed, was ultimately successful.

28. However my success was not had without first making what I feel are advances in burnishing and making disposable JFTOT heater tubes.

29. Burnishing is admittedly an old art, and to me as a technical professional it is quite obscure.

30. Due in part to this obscurity it has been a poorly understood process, with the result that very little about burnishing can reasonably be considered obvious to those skilled in the field, from my technical perspective.

31. Manufacturers' literature generally claims that a faster tool rotation speed in burnishing produces superior results.

32. In my own initial numerous experiments to attempt to produce flawless disposable JFTOT heater tubes, little progress was made and little success accomplished.

33. I was not successful until I ignored what I had been taught and instead substantially lowered the speed of the burnishing tool or machine speed.

34. This simple step, being the direct opposite of the general teachings about burnishing of which I was aware, was in no way obvious to me.

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35. Had it been obvious to one of ordinary skill in the art, success would have surely been achieved many years earlier, by others.

36. Burnishing has an advantage over prior methods of making heater tubes because it does not rely on chemicals and abrasive polishing to achieve a highly polished surface.

37. Beyond that improvement in burnishing technology, or in conjunction with better understanding the mechanical processes involved in burnishing, this subtle but key advance was made to gain control of the harsh burnishing forces as applied specifically to a soft aluminum work piece such as an aluminum heater tube, in order to develop the required control of a process for this application.

38. My goal was to permit burnishing forces to be applied to a heater tube without simultaneously bending, elongating, over-hardening, or crystallizing the soft metallic work piece, thus rendering the resultant tubes useless.

39. I believe that my invention represents advancement in the art, over and above what has been historically practiced, or even attempted.

40. More specifically, although burnishing is an old technology, nobody has successfully circumvented the difficulties and successfully employed burnishing to produce a suitable heater tube prior to my invention.

41. My prior efforts during 1989 and initial efforts in 1999 produced (1) an unsatisfactory burnishing "ring" around the heater tube, and/or (2) tubes with a slightly crushed sidewall resulting in unsatisfactory elongated tubes, until the development of the current invention.

42. A heater tube that has been burnished has a slightly different, but insignificant, physical appearance than a heater tube made from the conventional prior art process.

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43. A burnished heater tube which has been coated with oxidized jet fuel reveals problems with the jet fuel in the same way as a heater tube made from the conventional prior art process.

44. Under magnification, a burnished heater tube has a superior surface compared to a heater tube made from the conventional prior art process.

45. After I commercially marketed my new heater tubes, I was sued by PAC, Cause No. 2000-CI-01400; Petroleum Analyzer Company, L.P. v. David L. Morris and Standard Heater Tube, Inc., in the Texas State District Court, 288th Judicial District, Bexar County Texas.

46. In the suit PAC claimed that I misappropriated its trade secrets on burnishing and that it owned my invention.

47. The suit was dismissed and I still own and am freely and exclusively using my invention and PAC has no rights to my invention.

48. It seems to me that both (1) the burnished tube itself, and (2) the improved method using an admittedly old burnishing process adapted to produce such a heater tube, should each be valued and recognized as new, novel, and patentable inventions.

49. I urge such consideration for and on behalf of and in the interests of maintaining and protecting the technological basis of my small business.

50. Such burnished disposable JFTOT heater tubes, as well as the process for manufacturing them, are my rightful inventions, for which I seek patent protection under the law.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 12, 2003

David L. Morris

David L. Morris

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President
Standard Heater Tube, Inc.

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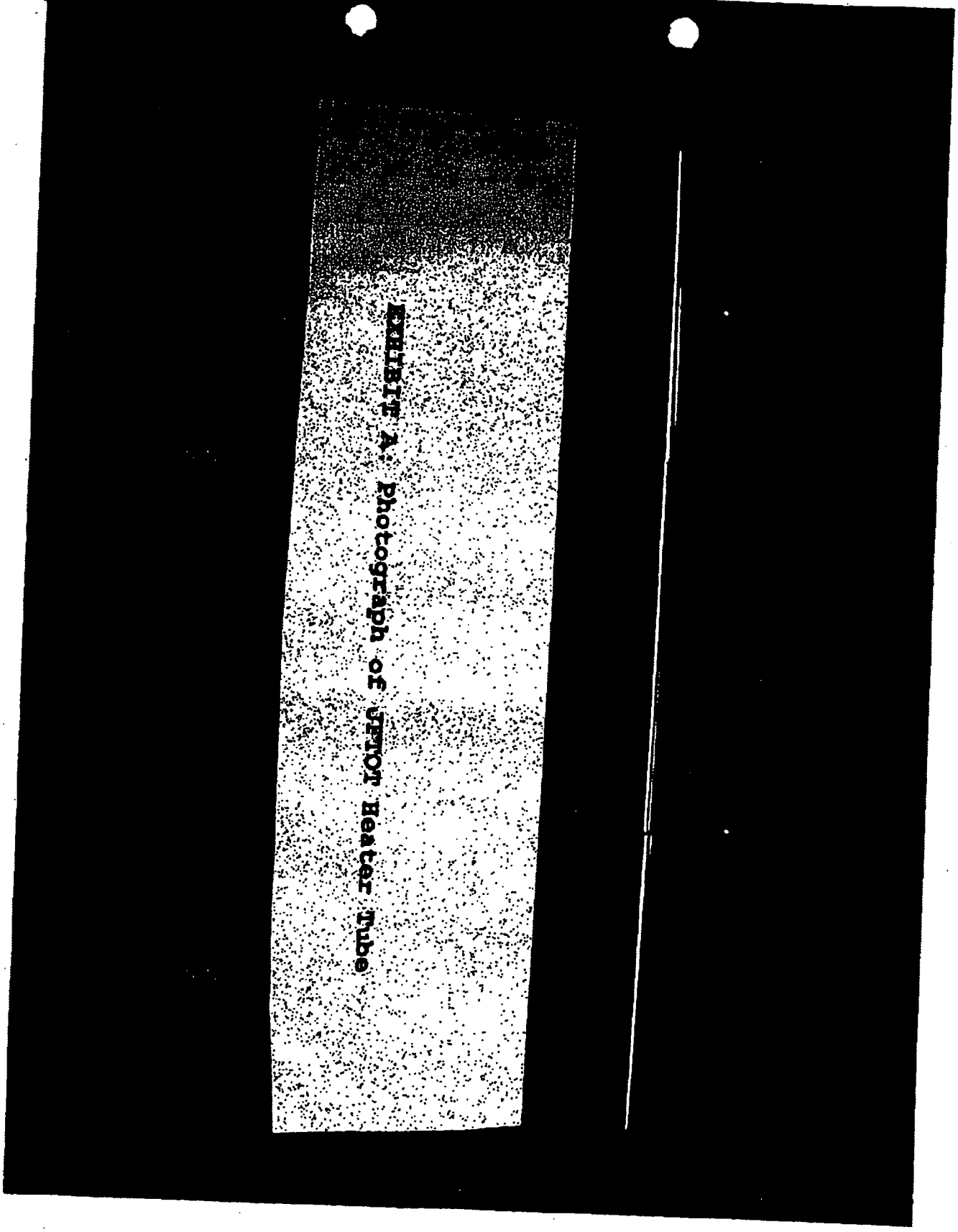

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